

## REMARKS

Applicants submit the present *Amendment After Final* in order to respond to the positions and arguments presented in the Final Action mailed November 16, 2007.

Applicants have amended Claim 1 to include the recitations of Claim 9 and intervening Claim 2. Claims 2 and 9 have accordingly been cancelled. The dependencies of Claims 3, 5-6 and 11-12 have been changed in light of the cancellation of Claim 2. No other amendments to the claims have been made. For the reasons discussed below, Applicants respectfully submit that all of the pending claims are patentable over the cited art and are in condition for allowance.

### I. The Final Rejection is Premature

As an initial matter, Applicants respectfully submit that the designation of the November 16, 2007 Office Action as a Final Action is premature. Pursuant to the Manual of Patent Examining Procedure, "second or any subsequent actions on the merits shall be final, **except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement.**" M.P.E.P. § 706.07(a). Here, Applicants response of October 9, 2007 did not include any claim amendments, nor are the rejections based on information submitted by Applicants in an Information Disclosure Statement. As such, the designation of the November 16, 2007 Office Action as a Final Action is premature. In fact, independent Claims 14 and 26 have never been amended, yet the present Office Action presents new grounds of rejections and has been designated as a Final Office Action, which is not permitted under M.P.E.P § 706.07(a). Accordingly, pursuant to M.P.E.P. § 706.07(c), Applicants respectfully request withdrawal of the finality designation.

### II. Claims 1, 3-8 and 10-13 Are Patentable Over the Cited Art

Claims 1, 3, 5-7 and 10-13 each stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent Publication No. 2002/0173277 to Takao et al. ("Takao") in view of U.S. Patent Publication No. 2002/0025810 to Takayama et al. ("Takayama"). Claim 4 stands rejected under 35 U.S.C. § 103(a) as being obvious over Takao in view of Takayama and

U.S. Patent No. 6,115,615 to Ota et al. ("Ota"). Claim 8 stands rejected under 35 U.S.C. § 103(a) as being obvious over Takao in view of Takayama and U.S. Patent Publication No. 2002/0062472 to Medlock et al. ("Medlock"). Applicants respectfully traverse the rejections of these claims.

As noted above, Claim 1 has been amended to include the recitations of Claim 9 and intervening Claim 2. As amended, Claim 1 recites:

1. A wireless terminal configured to communicate over a wireless local area network, comprising:
  - a data processor;
  - at least one **control unit** that is responsive to the data processor and that controls communications with an access point over a first communications channel and over a second full-duplex communications channel;
  - a first interface between the at least one control unit and the first communications channel; and
  - a second interface between the at least one control unit and the second communications channel;
  - wherein the at least one control unit comprises a MAC control unit; and
  - wherein data associated with a first application running on the wireless terminal is transmitted to the wireless terminal over the first communications channel, and wherein at least some of control signals associated with the first application are transmitted from the wireless terminal to the access point over the second communications channel.

Applicants respectfully submit that independent Claim 1 is patentable over the cited art for at least the following three (3) reasons.

A. The "Control Unit" of Takao is Not Responsive to the "Data Processing Unit"

Claim 1 recites that the "at least one control unit . . . **is responsive to** the data processor." In rejecting Claim 1, the Final Action states that the "switching processing unit 33" of Takao comprises the "data processing unit" and that the "switching controller 34" of Takao comprises the "at least one control unit" of Claim 1. However, Applicants respectfully submit that Takao includes **at least four different express teachings** showing that the

switching controller 34 is not responsive to the switching processing unit 33 as is expressly required by Claim 1. These teachings include:

1. FIG. 10 of Takao depicts the structure of the mobile terminal 20<sub>1</sub>. While switching controller 34 and switching processing unit 33 are both components of the mobile terminal, **no connection (i.e., arrow) is shown between these two components**, showing that the switching controller 34 is not responsive to the switching processing unit 33.
2. There is no teaching or suggestion in the specification that switching controller 34 is responsive to the switching processing unit 33.
3. The specification expressly states that "the switching controllers 53 and 34 switch the communication mode of the system **based on the control signal from the signal processing unit 50 of the base station**." (Takao at ¶ 0067).
4. The only input to the switching controller 34 shown in FIG. 10 comes from the parallel-to-serial converter 36, which forwards to the switching controller **signals received from the base station** over paths 45 or 46.

Thus, the specification and figures of Takao clearly and repeatedly teach that the "switching controller 34" is controlled **solely** by control signals generated by signal processing unit 50 of base station 10<sub>1</sub>. As such, Takao simply fails to teach or disclose at least one control unit that is **responsive to** the data processor **of the wireless terminal** as is recited in Claim 1. As such, the rejection of Claim 1 should be withdrawn.

The Response to Arguments section of the Final Action states that Takao discusses that the signal processing unit 33 of the mobile station "converts the digital signal into baseband units" and further asserts that the switching controller 34 of the mobile station "uses this signal to synchronize the mobile station with the base station." (Final Action at 2, citing to ¶¶ 0063, 0067 of Takao). However, the cited portions of Takao do not support this assertion. Instead, paragraph 0067 of Takao expressly states that the switching controller 34 "super[im]pose[s] **control signals** on the downlink to allow the base station 10<sub>1</sub> and the mobile station 20<sub>1</sub> to synchronize with each other." (Takao at ¶ 0067). Thus, the signals discussed in paragraph 0067 of Takao are **control signals from the switching controller 34** that are superimposed onto the downlink radio communication path, and are **not** the baseband data signal that is provided by the signal processing unit 33. In fact, FIG. 10 of Takao

expressly shows this in the form of the dotted line that exits the upper left of switching controller **34** which is used to feed the control signals into the data stream that is to be transmitted over the downlink to the base station.

The rejection portion of the Final Action further states that "the switching controller is responsive to the signal processing unit because the signal processing unit provides the baseband signals that will be used by the switching controller." (Final Action at 4). Applicants respectfully submit, however, that FIG. 10 of Takao and the discussion thereof clearly show that the switching controller **34** is not responsive to the baseband signals from the signal processing unit **33**. FIG. 10 shows that no communications path is provided over which the baseband signals from the signal processing unit **33** could be provided to the switching controller **34**, and the discussion above shows that the specification expressly teaches that the switching controller **34** is controlled "based on the control signal from the signal processing unit **50** of the base station." (Takao at ¶ 0067). Applicants submit that there is simply no teaching, in either the text or figures of Takao, that the switching processing unit **33** provides any information to switching controller **34** and, instead, Takao repeatedly teaches otherwise. As such, the rejection of Claim 1 should be withdrawn.

B. The Final Action Improperly Combines a Prior Art Drawing and a Separate Embodiment of Takao

The Response to Arguments section of the Final Action continues to assert the argument that FIG. 6 of Takao discloses a mobile station that includes a switching controller and a signal processing unit, and that the embodiments of FIGS. 6 and 10 of Takao can properly be combined together with Takayama to arrive at the invention of Claim 1. (Final Action at 2-3). However, **FIG. 6** of Takao depicts the structure of a prior art wireless terminal, whereas the rejection of the pending claims is based on **FIG. 10** of Takao, which discloses an embodiment of a wireless terminal according to the invention of Takao. As such, the Final Action is improperly using the present disclosure as a road map to take bits of pieces of multiple embodiments of Takao in an effort to replicate the invention of Claim 1. There is simply no reason why one of skill in the art would attempt to combine the prior art cited in Takao with the invention of Takao. In fact, it is clear that no such motivation exists

as Takao explains in detail the various **problems** with the prior art embodiment of FIG. 6. (See, e.g., Takao at ¶¶ 0023-0027).

More importantly, **it is beyond dispute that FIG. 6 of Takao likewise does not disclose** "at least one control unit . . . **is responsive to** the data processor" of the wireless terminal. In fact, what Takao expressly states is that the switching controller switches the switch **116** "based on the control signal supplied from the **signal processing unit 120 of the base station.**" (Takao at ¶ 0020). This is also explicitly shown in FIG. 6, which shows that the only input to switching controller **113** comes from receiver **115** (i.e., from the base station). Thus, it is simply beyond dispute that **neither** FIG. 6 nor FIG. 10 of Takao disclose a control unit that **is responsive to** the data processor of the wireless terminal as recited in Claim 1. As such, Applicants respectfully submit that the rejection of Claim 1 should be withdrawn for this additional reason.

C. Takao Fails to Disclose the Recitation of Original Claim 9

As noted above, Claim 1 has been amended to include the recitations of original Claim 9, which state that "data associated with a first application running on the wireless terminal is transmitted to the wireless terminal over the first communications channel, and wherein at least some of the control signals associated with the first application are transmitted from the wireless terminal to the access point over the second communications channel." The Final Action states that Takao discloses these recitations at paragraphs 0022, 0029 and 0058. (Final Action at 2-3 and 6).

Applicants respectfully submit that none of the cited portions of Takao disclose or suggest the above-quoted recitations of amended Claim 1. For example, paragraph 0022 of Takao merely states that more data is likely to be transmitted on the downlink than on the uplink. Paragraph 0029 of Takao describes three communications modes, two of which allow a frequency band to be shared between the uplink and the downlink. Paragraph 0058 explains how switching between these three modes can occur when the uplink and downlink traffic volumes differ. However, none of these paragraphs provides any teaching or suggestion of transmitting the **data** associated with a first application over a first communications channel, while transmitting at least some of the **control signals** associated

with that application over a second communications channel, as now is recited in Claim 1. Moreover, while the Response to Arguments section of the Final Action argues that "Takao discusses multi-media applications such as the Internet and email that use uplinks and downlinks on multiple channels/links depending on the data volume," this clearly does not teach the above-quoted recitation of Claim 1. Accordingly, the rejection of Claim 1 should be withdrawn for this additional reason.

Thus, for each of the above reasons, Applicants respectfully submit that Claim 1, as well as Claims 3-8 and 10-13 depending therefrom, are patentable over the cited art. In addition, Applicants respectfully submit that at least Claims 3-5, 8 and 12-13 are independently patentable over the cited art.

In particular, Claim 3 recites that the wireless terminal further includes "a traffic control unit that is responsive to the data processor." The Final Action states that the "switching controller is used to synchronize with the base station, which eventually leads to the switching of modes . . . that is responsive to the data processor." However, as discussed above, it is beyond question that the switching controller **34** of Takao is not responsive to the signal processing unit **33**. As such, the traffic control unit of Claim 3 is clearly not taught or suggested by Takao, providing an independent basis for withdrawal of the rejection of Claim 3. Claim 4 depends from Claim 3, and hence is patentable over the cited art for at least each of the reasons that Claim 3 is patentable over the cited art.

Claim 5 recites that "the at least one MAC control unit also includes a traffic control unit that forms a data transmission route for each of a plurality of applications running on the wireless terminal." The Final Action states that paragraph 0043 of Takayama discloses the recitations of Claim 5. However, all that paragraph 0043 of Takayama states is that the wireless MAC controller **32** of Takayama "executes the control and management of the radio media and the data transmission/reception." It does not discuss forming a data transmission route for each of a plurality of applications running on the wireless terminal. Thus, the rejection of Claim 5 should be withdrawn for this additional reason.

Claim 8 recites that "the first communications channel is implemented as an orthogonal frequency division multiplexing channel and wherein the second communications channel is implemented as a direct sequence spread spectrum communications channel." The

Final Action states that the recitations of Claim 8 are taught by Medlock, and that it would have been obvious to modify the combination of Takao and Takayama based on Medlock. (Final Action at 11). Applicants respectfully disagree. The cited portion of Medlock merely states that the invention described therein may be implemented in a wide variety of communications systems, including direct sequence spread spectrum systems OFDM systems. It does not teach or suggest using both an OFDM channel and DSSS channel in the same system as is recited in Claim 8. Accordingly, even if Medlock could properly be combined with the other cited references, which it cannot, the resulting combination still fails to disclose or suggest the invention of Claim 8.

Claim 12 recites that "the first and second communications channel are implemented using different multiple access techniques." The Final Action states that Takao at paragraphs 27-28 discloses the recitations of Claim 12. However, the cited portions of Takao include no disclosure whatsoever of the recitations of Claim 12. Instead, paragraph 0027 simply discusses problems with various prior art access techniques, and paragraph 0028 merely states that it is an object of the invention of Takao to "realize an efficient use of the radio frequency resources." Thus, the rejection of Claim 12 should be withdrawn for this additional reason.

Claim 13 recites that "the first communications channel and the second communications channel are implemented according to different versions of the 802.11 standard." The Final Action states that IEEE 802.11 refers to a family of standards, and that therefore Takayama discloses the recitations of Claim 13. Applicants respectfully disagree. There is simply no teaching or suggestion in Takayama of implementing the first communications channel according to a first version of the 802.11 standard, while implementing the second communication channel according to a different version. As such, Applicants respectfully submit that Claim 13 is also independently patentable over the cited art.

### **III. Claims 14-25 Are Patentable Over the Cited Art**

Independent Claim 14 and Claims 15-18, 22 and 24-25 depending therefrom stand rejected as being obvious over the combination of Takao and U.S. Patent Publication No.

2004/0073361 to Tzamaloukas et al ("Tzamaloukas"). Claims 19-20 stand rejected as being unpatentable over Takao in view of Tzamaloukas and U.S. Patent No. 6,480,480 to Du ("Du"). Claim 21 stands rejected as being unpatentable over Takao in view of Tzamaloukas and Ota. Claim 23 stands rejected as being unpatentable over Takao in view of Tzamaloukas and Medlock. Applicants also respectfully submit that Claims 14-25 are patentable over the cited art.

Independent Claim 14 recites:

14. A wireless communications system, comprising:
  - a wireless terminal that transmits and receives data associated with at least first and second applications that are running on the wireless terminal;
  - an access point that serves as an interface between the wireless terminal and at least one processing server that is located on at least one external network;
  - a first communications channel between the wireless terminal and the access point for transmitting data associated with the first application from the access point to the wireless terminal; and
  - a second communications channel between the wireless terminal and the access point for transmitting data associated with the second application between the wireless terminal and the access point.

In rejecting Claim 14 under Section 103, the Final Action states that Takao discloses all of the recitations of Claim 14 except for "first and second applications that are running on the wireless terminal," which the Final Action states is disclosed by Tzamaloukas. (Final Action at 6-7). Applicants respectfully disagree with the rejection of Claim 14 for the following reasons.

The last two clauses of Claim 14 recite that the first communications channel transmits data associated with a first application that is running on the wireless terminal and that the second communications channel transmits data associated with a second application that is running on the wireless terminal. The Final Action states that Takao at paragraphs 0005 and 0029 discloses these recitations of Claim 14. However, the cited portions of Takao do not discuss first and second applications that are running on the wireless terminal, and neither Takao nor Tzamaloukas disclose or suggest using a first communications channel for transmitting data associated with a first application while using a second communications



channel for transmitting data associated with a second application as is recited in Claim 14. Accordingly, Applicants respectfully submit that the combination of Takao and Tzamaloukas does not render Claim 14 obvious for at least this reason.

Claims 15-25 depend from Claim 14, and hence are patentable as depending from a patentable base claim. In addition, Applicants respectfully submit that at least Claims 15, 17 and 23 are independently patentable over the cited references.

Claim 15 recites that "the second communications channel is further used to transmit control information associated with the first application from the wireless terminal to the access point." While the Final Action cites to paragraphs 0022 and 0029 of Takao as disclosing the recitations of Claim 15, Applicants respectfully submit that neither of these paragraphs disclose or suggest transmitting the data associated with a first application over a first channel while transmitting the control information associated with that application over a second channel as is recited in Claim 15. Accordingly, Claim 15 is independently patentable over the cited art.

Claim 17 recites that "the throughput of the first communications channel exceeds the throughput of the second communications channel." The Final Action states that paragraph 0058, lines 1-6 of Takao discloses the recitation of Claim 17. However, what paragraph 0058 of Takao discusses is switching to an FDD/TDD mixed mode when the uplink and downlink data volumes become asymmetric. This does not disclose or suggest the recitations of Claim 17.

Claim 23 recites that "the first communications channel is implemented as an orthogonal frequency division multiplexing channel and wherein the second communications channel is implemented as a direct sequence spread spectrum communications channel." The Final Action states that Medlock discloses the recitations of Claim 23. However, as discussed above with respect to the rejection of Claim 8, the cited portion of Medlock merely states that the invention described therein may be implemented in a wide variety of communications systems, including direct sequence spread spectrum systems OFDM systems. It does **not** teach or suggest using both an OFDM channel and DSSS channel as is recited in Claim 23. Accordingly, the rejection of Claim 23 should be withdrawn for this additional reason.

#### **IV. Claims 26-32 Are Patentable Over the Cited Art**

Claims 26-28 and 30 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Takao in view of Tzamaloukas. Claim 29 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over Takao in view of Tzamaloukas and Medlock, and Claims 31-32 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Takao in view of Tzamaloukas and Takayama. Applicants likewise submit that Claims 26-32 are patentable over the cited art.

Claim 26 recites "receiving at the wireless terminal over a first communications channel . . . application data associated with a first of the plurality applications" and "establishing a transmission path between the wireless terminal and the access point over a second communications channel for application data associated with a second of the plurality of applications." As discussed above with respect to Claim 14, neither Takao nor Tzamaloukas discloses or suggests such a method of supporting a plurality of applications on a wireless terminal. Accordingly, the rejection of Claim 26 should be withdrawn for at least this reason.

Claims 27-32 depend from Claim 26 and hence are patentable at least as depending from a patentable base claim. In addition, Applicants submit that Claim 29 is independently patentable over the cited art for the same reasons, discussed above, that Claim 23 is independently patentable.

#### **V. Claims 33 and 35-36 Are Patentable Over the Cited Art**

Claims 33 and 36 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Takao in view of Tzamaloukas and Takayama. Claim 35 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over Takao in view of Tzamaloukas, Takayama and Medlock. Claim 33 recites:

33. A wireless communication system for transmitting and receiving data from a plurality of applications, comprising:

a wireless terminal for transmitting and receiving data associated with a first of the plurality of applications and for running the first application;

an access point interfaced with an external processing server, the access point transmitting data associated with a second application of the plurality of applications

to the wireless terminal, and forwarding the data associated with the first application that is received from the wireless terminal to the external processing server; and

a plurality of wireless channels for transmitting and receiving the data associated with the first and second applications between the wireless terminal and the access point;

wherein the plurality of wireless channels operates in different frequency bands and have different throughputs; and

wherein the second application is remote from the wireless terminal.

The Final Action states that Takao discloses all of the recitations of Claim 33 except for "transmitting and receiving data from a plurality of applications" and that the "wireless channels operate in different frequency bands." The Final Action further states that Tzamaloukas discloses "transmitting and receiving data from a plurality of applications", and that Takayama discloses wireless channels that operate in different frequency bands. The Final Action further asserts that it would have been obvious to combine the alleged teachings of Takao, Tzamaloukas and Takayama to arrive at the invention of Claim 33. Applicants respectfully disagree with these conclusions.

In particular, what Claim 33 recites is that a first application is running on the wireless terminal and that the second application is remote from the wireless terminal. Neither Takao nor Tzamaloukas discloses or suggests the wireless communication system of Claim 33 where the first application is run on the wireless terminal and the second application is remote from the wireless terminal. Applicants pointed out this deficiency with the rejection of Claim 33 in the Applicants prior response. Despite this, the Final Action does not even attempt to explain how the cited combination of references disclose that the first application is run on the wireless terminal and the second application is remote from the wireless terminal. In addition, Claim 33 further recites that the plurality of wireless channels have different throughputs. Once again, the Final Action does not even attempt to explain how this recitation of Claim 33 is taught by the cited combination of references. In addition, Applicants respectfully submit that the Final Action fails to identify any plausible rationale for picking and choosing selected portions of Takao, Tzamaloukas and Takayama to allegedly arrive at the invention of Claim 33. Applicants respectfully submit that the rejection of Claim 33 clearly represents a hindsight effort to combine references that is

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improper under 35 U.S.C. § 103. Accordingly, Applicants respectfully submit that Claim 33, and Claims 35-36 depending therefrom, are also patentable over the cited art.

## **VI. Conclusion**

For each of the above, reasons, Applicants respectfully submit that the Final Action was prematurely issued in the present case, and that the Examiner has failed to make a *prima facie* showing of unpatentability with respect to the pending claims. Accordingly, Applicants respectfully request allowance of the claims and passing of the application to issue in due course. Alternatively, to the extent that a new Office Action is issued that attempts to overcome the above-noted deficiencies with the Final Action, Applicants respectfully submit that any such Office Action should be a non-final Office Action so that Applicants have a full and fair opportunity to respond to the new/revised rejections contained therein.

Respectfully submitted,

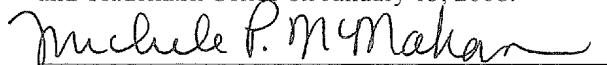


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### **CERTIFICATION OF ELECTRONIC TRANSMISSION UNDER 37 CFR § 1.8**

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